TECUSAN, N.; SANDRU, A.; POPESCU, M.; STEFAN, Const.; ILIE, E.; NITA, I.; COSMA, I.

Determining the fuel consumption in vacuum displacement of the U-650 tractor. Bul St si Tehn Tim 9 no.1:135-142 Ja-Je '64.

SANDRU, A.; STANESCU, St.; ALEXANDRESCU, C.; ILIESCU, C.

Studies on the improvement of the operating technology of the main agricultural aggregates. Bul St si Tehn Tim 9 no.2: 463-470 Jl-D '64.

SACALUS, Iosif, ing.; SANDU, Aurel

Simplifying and mechanizing the manipulation of transport documentation. Rev cailor fer 13 no.3:139-145 Mr '65.

SANDRU, C.

CA

11 B

PROCESSES AND PROPERTIES INDEX

Determination of glutathione in tissues. I. Manta and C. Sandru. *Rev. Științifică "V. Adamachi"* 32, 132-5 (1946).—After reviewing existing methods for blood and tissues, the Binet-Weller method (C.A. 29, 6913^6; 30, 4004^9) was found most satisfactory. The originally used iodine and thiosulfate soln. could be advantageously replaced by a single 0.002 N KIO_3 soln. F. Kertesz

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

STROESCU, I.; STROESCU, Ortansa; NEGOESCU, M.; SANDRU, Emilia .

Functional recovery from coxo-femoral arthroses. Value of the kinesitherapeutic methods. Stud. cercet. med. intern. 5 no.3:297-309 '64.

S/190/63/005/003/023/024
B101/B203

AUTHORS: Simionescu, C., Feldman, D., Şandru, F.

TITLE: Photopolymerization of acrylonitrile in a homogeneous medium

PERIODICAL: Vysokomolekulyarnyye soyedineniya, v. 5, no. 3, 1963, 460-466

TEXT: The polymerization of acrylonitrile in salt solutions and in dimethyl formamide (DMF) was studied during irradiation by a 300-v ultraviolet lamp. The following salt solutions were used (in % by weight): (a) 31.25 $CaCl_2$ + 31.25 $ZnCl_2$ + 37.5 H_2O; (b) 62.5 $ZnCl_2$ + 37.5 H_2O. A solution of 1.537 g/liter $Ce(SO_4)_2 \cdot 4H_2O$, acidified with 26.82 g/liter HCl, served as initiator. The volume ratio monomer : initiator : solvent was 1 : 3 : 15. The conversion was higher in $ZnCl_2$ than in $ZnCl_2$ + $CaCl_2$, reaching more than 80% after 6 hrs. Molecular weights of more than 400,000 were attained in $CaCl_2$ + $ZnCl_2$ but were a little lower in $ZnCl_2$. In DMF the degree of conversion after 10 hrs was only about 25% at 0°C (optimum temperature), and the molecular weight attained only 26,000 - 34,000. Rates of polymeriza-

Card 1/2

Photopolymerization of... S/190/63/005/003/023/024
B101/B203

tion (in mole/l·sec) at 20°C: 29.6 in $ZnCl_2 + CaCl_2$; 36.3 in $ZnCl_2$; at 0°C: 8.33 in DMF. The infrared spectrum showed that the polymer synthesized by UV irradiation did not differ from polyacrylonitriles synthesized by other methods. There are 7 figures and 1 table.

ASSOCIATION: Institut khimii i fiziki im. P. Poni Yasskiy filial AN RNR
(Institute of Chemistry and Physics imeni P. Poni Iasi Branch AS Rumanian People's Republic)

SUBMITTED: September 11, 1962

Card 2/2

SANDRU, Gh.

Mechanization of the consumption records of combustibles for locomotives. Rev cailor fer 11 no. 12: 693-694 D '63.

1. Contabil-sef, Directia Regionala Brasov.

SANDRU, I., AND OTHERS.

Some problems regarding the geography of the city of Pascani. p. 197.

ANALELE STIINTIFICE SECTIUNEA II: STIINTE NATURALE. Iasi. Rumania.
Vol. 5, no. 1, 1959.

Monthly List of East European Accessions (EEAI) LC, Vol. 9, no. 1,
January 1960

Uncl.

HERBST, C.; SANDRU, I.; IANCU, M.; CUCU, V.; GISTESCU, P.

The 19th International Geographical Congress. Probleme geog 8:19-28 '61.

1. Membru al Comitetului de redactie "Probleme de geografie" (for Herbst).

SANDRU, Ion, prov. univ. (Iasi)

Some marginal notes on the Moldavian geographical works of 18th century. Natura Geografie 14 no.4:11-17 Jl-Ag '62.

1. Membru al Cometetului de redactie, "Natura, Seria geografie-geologie."

1,C

SANDRU, I., Prof. univ. (Iasi); POGHIRC, P. (Iasi)

"Map of the zones of influence of the large French cities" by Georges Chabot. Reviewed by I. Sandru and P. Poghirc. Natura Geografie 14 no.5: 87 S-O '62.

1. Membru al Comitetului de redactie, "Natura, Seria geografie-geologie" (for Sandru).

SANDRU, I.; CUCU, V.; SFICLEA, V.

Geographical contributions to the Galati-Braila urban grouping.
Anal St Jassy II 9:151-160 '63.

MANOLACHE, C.; BOGULEANU, Gh.; SANDRU, I.; BERATLIEF, C.

New contributions to the biological study and fight against the Colorado beetle (Leptinotarsa decemlineata Say) in Rumania. Studii cerc biol anim 15 no.4:443-464 '63.

1. Membru corespondent al Academiei R.P.R. (for Manolache).

SANDRU, I.; CUCU, V.

Predeal, some considerations on urban geography. Anal St Jassy II 10:137-145 '64.

1. Submitted October 26-27, 1963.

SANDRU, Ion, dr., prof. univ. (Iasi)

Economic geography; subject matter, method, and history.
Natura Geografie 16 no. 2: 3-10 Mr-Ap '64.

SANDRU, I., prof. univ.; SFICLEA V., conf. univ. (Iasi); CUCU, V. (Bucuresti); POGHIRC, A.; CHIRIAC, D.

Map of the population distribution of Rumania. Natura Geografie 16 no.3:3-8 My-Je '64.

SANDRU, I., prof. dr. (Iasi); CUCU, V. (Bucuresti)

Geography in Rumania on the 20th anniversary of the liberation. Natura Geografie 16 no. 4:3-14 Jl-Ag '64.

L 30735-66 EWT(d)/EWP(v)/EWP(k)/EWP(h)/EWP(1)

ACC NR: AP6022112 SOURCE CODE: RU/0018/65/000/010/0565/0568

51
B

AUTHOR: Sandu, Ioan

ORG: none

TITLE: Determining the driving power for mechanical cutting devices 14

SOURCE: Constructia de masini, no. 10, 1965, 565-568

TOPIC TAGS: electric motor, cutting tool, power supply 14

ABSTRACT: The author derives a formula which allows the simple determination of the driving power required from the electric motors actuating cutting presues. Orig. art. has: 8 figures and 27 formulas. [Based on author's Eng. abst.] [JPRS]

SUB CODE: 13, 10 / SUBM DATE: none / ORIG REF: 003

Card 1/1 FV UDC: 621.983.321-83

SANDRU, I.D.

Some general aspects on the diapause and hibernation of the Colorado potato beetle (Leptinotarsa decemlineata Say). Studii agr Timisoara 10 no.1:179-184 Ja-Je '63.

SANDRU, L.

Something new in driving drifts in hard and very hard rocks.

p. 10
Vol. 7, no. 1, Jan. 1956
REVISTA MINELOR
Bucuresti

SO: Monthly List of East European Accessions (EEAL), LC, Vol. 5, no. 12
December 1956

SANDRU, L., ing.; RADULESCU, L., ing.; STATULESCU, I., tehn.; SOLOMONOVICI, I., tehn.

New aspects of the research on rock pressure in lignite mines. Rev min 15 no.2:62-73 F '64.

FODOR, I., ing.; SANDRU, L., ing.; GLODEANU, E., ing.

Metallic support of the working chambers in lignite mines by props and beams. Rev min 15 no.11:526-532 N '64.

SANDRU, N.

On the action of concentrated stresses in the internal elastic semiplane with fixed border. Studii cerc mat 14 no.3:453-463 '63.

SHANDRU, N. [Sandru, N.]

On the action of concentrated forces varying in time in an unbounded elastic space. Bul Ac Pol tech 12 no. 1: 45-47 '64

1. Matematiko-mekhanicheskiy fakul'tet, Bukharestskiy universitet. Predstavleno V. Novatskim [Nowacki, W.]

GASPAR, E., ing.; SANDRU, P., fiz.

Determining the hydrologic characteristics of subterranean waters by the radioactive tracer method. Hidrotehnica 6 no. 8:291-294 Ag '61.

BIRNBAUM, M.; GASPAR, E.; ONCESQU, M.; SANDRU, P.; TEITEL, T.

Determining fluid losses in the main conduits with the aid of radioactive tracers. Studii cerc fiz 12 no.1:115-124 '61. (EEAI 10:9)

1. Institutul de fizica atomica, Bucuresti.

(Fluid mechanics) (Aqueducts) (Radioactive tracers)

SANDRU, P., fiz.

A radioactive method to control successive pumping of crude oil through the main lines, tested in Rumania. Petrol si gaze 12 no.9:409-412 S '61.

(Petroleum engineering) (Radiation)

S/058/63/000/003/009/104
A160/A101

AUTHORS: Grigorescu, L., Lazarovici, C., Mateescu, N., Şandru, P.

TITLE: The calibration of Co^{60} sources by the method of the βγ-coincidences

PERIODICAL: Referativnyy zhurnal, Fizika, no. 3, 1963, 49 - 50, abstract 3A389 ("Studii şi cercetări fiz. Acad. RPR", no. 3, 1962, v. 13, 579 - 604, Rumanian; summaries in Russian and French)

TEXT: Reported are the results of using the method of the βγ-coincidences for the calibration of Co^{60} sources. The recording of the β and γ-radiation is performed with the help of Geiger-Müller counters. The correct measuring of the γ-background in a β-counter is indicated. Various factors which limit the accuracy of the source calibration by this method are discussed. Correcting formulas for accounting for these effects are presented.

[Abstracter's note: Complete translation]

Card 1/1

POPESCU, Mircea, ing.; SANDRU, Petre; TOPA, Aurelia

Method for determining the source of macroscopic exogenous nonmetallic inclusions in steel. Metalurgia constr mas 14 no.9:795-799 S '62.

1. Combinatul siderurgic-Hunedoara (for Popescu).
2. Institutul de fizica atomica (for Sandru, Topa).

NICULESCU, I., ing. laureat al Premiului de Stat; SANDRU, P., fiz.

New method for identifying the channeling agent in the processes of water injection. Petrol si gaze 12 no.5:223-225 My '61.

1. D.G.F.E.T. (for Niculescu). 2. Institutul de fizica atomica (for Sandru).

GRIGORESCU, L.; LAZAROVICI, C.; MATEESCU, N.; SANDRU, P.

Calibration of the Co^{60} sources by the method of β-γ coincidences. Studii cerc fiz 13 no.4:579-604 '62.

1. Institutul de fizica atomica, Bucuresti.

OVECHKIN, G.V.; SANDRYGAYLO, L.Ye.

Effect of the discharge energy and the plasma temperature on the relative intensity of the analytical pairs of lines of zinc and copper. Zhur.anal.khim. 18 no.7:799-807 Jl '63. (MIRA 16:11)

1. V.I.Lening Belorussian State University, Minsk.

SANDTNER, J.

"Plan for mining by the shortwall method with backfilling in the vast seams of the North Bohemian Brown-Coal Mines."
Uhli, Praha, Vol 4, No 7, July 1954, p. 209

SO: Eastern European Accessions List, Vol 3, No 10, Oct 1954, Lib. of Congress

L 34532-66

ACC NR: AP6024776 SOURCE CODE: CZ/0014/65/000/007/0256/0257

AUTHOR: Sandtner, Jan (Engineer)

39

B

ORG: none

TITLE: Relay flip-flop

SOURCE: Sdelovaci technika, no. 7, 1965, 256-257

TOPIC TAGS: flip flop circuit, electric relay, circuit reliability, circuit design

ABSTRACT: The article describes a circuit which can be used in the designing of equipment where the emphasis is on reliability. The proposed relay flip-flop circuit is very simple and is composed of ordinary components whose values are not critical. Its main advantage is the small number of contacts necessary for efficiency of the circuit. Orig. art. has: 14 formulas. [JPRS]

SUB CODE: 09 / SUBM DATE: none

Card 1/1

0415 2612

L 09910-67 EEC(k)-2 IJP(c)

ACC NR: AP6032758 SOURCE CODE: CZ/0039/66/027/009/0573/0579

AUTHOR: Sandtner, Jan (Engineer); Janata, Milan (Engineer) 27

ORG: Physics Institute CSAV, Prague (Fyzikalni ustav CSAV)

TITLE: Improving the temperature compensation of Zener diodes 25

SOURCE: Slaboproudy obzor, v. 27, no. 9, 1966, 573-579.

TOPIC TAGS: Zener diode, temperature compensation, electric shunt, shunt resistor

ABSTRACT: A new method of temperature compensation for Zener diodes, developed in the Physics Institute of the Czechoslovak Academy of Sciences, Prague, is described. The advantages of the method are that temperature compensation is regulated by electric shunt resistors and four types of temperature compensation may be achieved: ordinary, extraordinary, conjugate, and marginal. It is possible to obtain temperature compensation of voltage or even of dynamic resistance with a predetermined current, and temperature compensation of voltage over a broad current range; the output voltage may be adjusted within narrow limits. The results are comparable with the parameters of recent voltage

Card 1/2 UDC: 621.396.622.6.669.789/.78

standards. The accuracy of temperature stabilization of voltages is of the order of 10^{-5}/C with a current range up to ± 60% adjustment of ± 10%; of the nominal value, or of the order of 10^{-7}/C with an accuracy of current the output voltage is approximately 8 volts. The working current ranges from 20 mamp to 100 mamp, the dynamic resistance is 2 to 20 ohms, and the temperature coefficient of dynamic resistance may reach 10^{-5}/C. Additional possibilities are stated for improving the accuracy of temperature compensation in Zener diodes above the accuracy limits of the measuring methods used in adjusting temperature compensation. Orig. art. has: 9 figures and 16 formulas. [Based on authors' abstract]

SUB CODE: 09/ SUBM DATE: none/ / ORIG REF: 003/ OTH REF: 003/

TIBOR, Iona, corespondent; SANDU, B., ing.; BELCIN, Ilie, corespondent;
SIMIONESCU, Mircea, corespondent; SZILAGHI, Gh., corespondent;
SZECSI, M., corespondent; MARCOVICI, Gh., corespondent

More and more enterprises with the annual plan carried out.
Constr Buc 14 no. 674: 1 8 December 1962.

SANDU, B., coresp.

Conditions for increased achievements. Constr Buc 17 no.789:1
20 F '65.

S/194/62/000/001/041/066
D201/D305

AUTHOR: Sandu, Dumitru

TITLE: Delay line relaxation circuits

PERIODICAL: Referativnyy zhurnal, Avtomatika i radioelektronika, no. 1, 1962, 7, abstract 1Zh53 (An ştiinţ. Univ. Iaşi, 1961, Sec. 1, 7, no. 1, 133-141)

TEXT: The possibility of increasing the stability of pulse repetition frequency divider circuits and of pulse shaping circuits by using delay lines was investigated. The operation of several frequency divider and shapring circuits was analyzed and factors, determining the shape and duration of output pulses were investigated. It was found that the use of delay lines improves the stability of relaxation circuits. /Abstracter's note: Complete translation./

Card 1/1

SANDU, Dumitru

Typical circuits with transistors and ferrites used in electronic digital computers. Studii fiz tehn Iasi 12 no.2:315-335 '61.

SANDU, D.; VRAJITORU, D.; SANDULOVICI, R.

Apparatus with transistors for selecting the magnetic commutating tores. Studii fiz tehn Iasi 13 no.1:33-38 '62.

L 60309-65

ACCESSION NR: AP5021232 RU/0011/64/008/005/0205/0211

14

B

AUTHOR: Sandu, D. (Engineer)

TITLE: Method for the calculation of a ferrite memory based on the equivalent circuit during switching

SOURCE: Automatica si electronica, v. 8, no. 5, 1964, 205-211

TOPIC TAGS: ferrite core memory, computer circuit, computer switching

ABSTRACT: The author describes and illustrates a method for the calculation of a ferrite memory with linear selection. The method is based on the equivalent circuit of the memory and switching rings and may be extended to other types of memory. Orig. art. has 9 figures, 22 formulas and 2 graphs.

ASSOCIATION: none

SUBMITTED: 00 ENCL: 00 SUB CODE: DP

NO REF SOV: 002 OTHER: 006 JPRS

1/1

ZAMFIR, C., dr.; CIOBA, Gh., dr.; SANDU, G., dr.; MERCA, Z., dr.

Considerations on rheumatic coronaritis. Med. intern. 15 no.7: 823-828 Jl '63.

1. Lucrare efectuata in Sectia I de boli interne a Spitalului militar central, Bucuresti.

(CORONARY DISEASE) (RHEUMATIC HEART DISEASE)
(HEART BLOCK) (ARRHYTHMIA)
(ELECTROCARDIOGRAPHY) (ARTHRITIS, RHEUMATOID)

ZAMFIR, C., dr.; EFANOV, Al. medic emerit, dr.; SINGER, D., dr.; SANDU, G.dr.

Mediastinopulmonary polymorphous sarcoma with pericardial and myocardial invasion and polypous formations causing stenosis of the pulmonary artery. Med. intern. (Bucur.) 16 no.6:741-749 Je'64.

1. Lucrare efectuata in Sectia I de boli interne si Laboratorul de anatomie patologica din Spitalul militar central, Bucuresti.

L 33715-66

ACC NR: AP6025154 SOURCE CODE: RU/0012/65/061/004/0573/0582

AUTHOR: Turcu, E. (Doctor; Lieutenant colonel); Sandu, G. (Doctor; Major); Morca, Z. (Doctor; Captain)

18

B

ORG: none

22

TITLE: Some considerations concerning cardiovascular emergencies in military units

SOURCE: Revista sanitara militara, v. 61, no. 4, 1965, 573-582

TOPIC TAGS: cardiovascular system, military medicine, cardiovascular system disease

ABSTRACT: A discussion of the principal clinical aspects of cardiovascular emergencies, namely acute dyspnea, palpitation precordial pains and loss of consciousness. The typical symptoms and usual therapeutic measures to relieve them are given under each item. [JPRS: 33,500]

SUB CODE: 06 / SUBM DATE: 30Jul64

Card 1/1 90

0916 [illegible]

SANDU, Gh., ing.

Contributions to the knowledge of the hydrosaline regime of moist phreatic chernozems in the Siret-Ialomita Basin. Hidrotehnica 7 no.4:113-119 Ap '62.

L 12161-66

ACC NR: AP6030196 SOURCE CODE: RU/0022/66/011/001/0029/0036

AUTHOR: Sandu, Gheorghe (Doctor; Engineer; Laboratory Chief); Rudzic, Natalia (Engineer; Researcher); Dincu, Ion (Doctor; Engineer) 6 B

ORG: Laboratory of Soil Improvement, Section of Pedology, Central Institute for Agricultural Research (Laboratorul de pedologie ameliorativa din sectia de pedologie a Institutalui central de cercetari agricole)

TITLE: Mineralization of the ground water in the Oltenita-Dorobantu embanked precinct

SOURCE: Hidrotehnica, gospodarirea apelor, meteorologia, v. 11, no. 1, 1966, 29-36

TOPIC TAGS: underground water, hydrology

ABSTRACT: On the basis of the data presented, the authors distinguish three characteristic areas with regard to mineralization of the ground water: the flood plain zone under the terrace, the central flood plain, and the zone over the bank ridge. In the central flood plain, the degree of mineralization is significantly lower in the permeable layers than in the clayey ones. Ground water of the sandy layers is strongly bicarbonatic, of the sandy-clayey layers bicarbonatic-chloridic, and of the clayey layers chloridic-bicarbonatic. Orig. art. has: 3 figures and 4 tables. [Based on authors' Eng. abst.] [JPRS: 35,326]

SUB CODE: 08 / SUBM DATE: 00Apr65 / ORIG REF: 005 / SOV REF: 002
OTH REF: 005

Card 1/1 hs UDC: 55.491.43

SANDU, Ioan

BRAUNER, R., Prof.; IACOB, H., Dr.; ANGHELESCU, H., Dr.; NICOLAU, V., Dr.;
HERACLIDE, M., Dr.; AUDISIO-CICULESCU, M., Dr.; PANTELESCU, L., Dr.;
SANDU, Ioan, Dr.; PASCU, T., Dr.; BUCUR, N., Dr.; BASARAB, A., Dr.

Studies of acute diseases of the lungs. Med. int., Bucur. 9 no.5:
685-699 May 57.

1. Clinica medicala a Spitalului Brincovenesc, director: prof. R. Brauner
si dr. A. Deravici, dr. D. Sarateanu. (Institutul de inframicrobiologie
al Academiei R. P. R., director: acad. St. S. Nicolau)

(PNEUMONIA, PRIMARY ATYPICAL
pathol. & diag.)

(RICKETTSIAL DISEASES
pneumonia, pathol. & diag.)

SANDU, N., ing.

Improving the quality of vamp leather by chrome tanning and vegetable retanning. Industria usoara 3 no.7:277-278 Ag [i.e.Jl] '56.

SANDU, N., ing.

New technological methods in leather vamp processing. Industria usoara 3 no.8:307-312 Ag '56.

SANDU, N.

"Certain defects in glove leather."

p. 60 (Industria Usoara) Vol. 4, no. 2, Feb. 1957
Bucharest, Rumania

SO: Monthly Index of East European Accessions (EEAI) LC. Vol. 7, no. 4, April 1958

SANDU, N.

H

RUMANIA / Chemical Technology. Chemical Products and
Their Application. Leather. Fur. Gelatin.
Tanning Materials. Industrial Proteins.

Abs Jour: Ref Zhur-Khimiya, No 9, 1959, 33663.

Author : Sandu, N.
Inst : Not given.
Title : Recent Hydrophobic Agents for Chrome Leather and
Textile Fibers.

Orig Pub: Ind. usoara, 1958, 5, No 1, 5-8.

Abstract: Theoretical bases and methods of hydrophobization
of chrome leather and textile fibers by aqueous
solutions of Cr complexes with stearic (I) or
naphthenic acids are examined. The most favor-
able conditions for the preparation of aqueous
solutions of the Cr and I complexes are narrowed
down. It is necessary to proceed from Cr chlor-

Card 1/3

SANDU, N.

Acceleration of the tanning process. p.267

INDUSTRIA USOARA. (Asociatia Stintifica a Inginerilor si Tehnicienlor din
Rominia si Departmentul Industriei Usoare din Ministerului Industriei
Bunurilor de Consum)
Bucuresti, Rumania
Vol. 6, no.7, July 1959

Monthly List of East European Accessions (EEAI) LC., Vol. 9, no.1, Jan. 1960
Uncl.

SANDRU, Nicolae

Action of a concentrated force in infinite elastic space.
Communicarile AR 13 no.12: 1019-1021 D'63.

1. Comunicare prezentata de academician Gr. G.Moisil.

CAMENSCHI, G.; SANDRU, N.

Action of a thermal source and a discontinuous thermal field in the interior of elastic semiplane with embedded boundaries. Studii cerc mat 15 no. 1:3-12 '64.

SANDRU, Nicolae

On the action of a concentrated force into inifinitely elastic space. Rev mec appl Roum 9 no.6:1381-1382 64.

1. Faculty of Mathematics and Mechanics, University of Bucharest.

SANDU, P., ing.

Some possibilities of reducing electric power consumption in city transportation systems. Rev transport 9 no.1:21-25 [illegible].

SANDU, P., ing.

On the possiblities of reducing the electric power consumption in town transportation. Pt. 2. Rev transport 9 no. 2:80-87 F '62.

HOTUPAN, Fl., corespondent; ISZLAI, Albert; CONSTANTINESCU, D., ing.; SANDU, S.; STAMATE, Petre; SANDA, Constantin; ROSCA, Dumitru ARADANU, G.

From the weekly letters. Constr Buc 16 no. 740:4 14 March 1964.

1. Seful laboratorului Fabricii de ciment, Medgidia (for Constantinescu.

MATEI, Gh., ing.; SANDU, S.; BERA, G.; CEBOTARENCU, M. POPESCU, N., ing.;
TOMESCU, Petre

Reviewing the achievements. Constr Buc 16 no.742:1
28 March 1964.

1. Postul de corespondenti voluntari de la craiova (for Matei).
2. Subredactia voluntara de la Ploiesti (for Cebotarencu).
3. Fabrica de geamuri-Scaeni (for Tomescu).

SANDUL, G.

Practice group on a state farm. Prof.-tekh. obr. 21 no.6:15 Je '64.
(MIRA 17:9)

1. Direktor sel'skogo professional'no-tekhnicheskogo uchilishcha No.8 Amurskoy oblasti.

KOCKOVA-KRATOCHVILOVA, Anna; SANDULA, J.; HRONSKA, Lydia

The genus Candida Berhout. I. Basic typization of strains of candida albicans (Robin Berkhout. Folia microbiol. 8 no.2: 109-116 '63.

1. Chemical Institute of the Slovak Academy of Sciences, Czechoslovak Academy of Sciences, Bratislava.

(CANDIDA) (CLASSIFICATION)

SANDULA, J.; KOCKOVA-KRATOCHVILOVA, Anna; ZAMECNIKOVA, Marcela

Genus Candida Berkhout. II. Pathogenicity of the species Candida albicans (Robin) Berkhout. Folia microbiol. 8 no.5: 313-317 '63.

1. Institute of Chemistry of the Slovak Academy of Sciences, Czechoslovak Academy of Sciences, Bratislava.
(MONILIASIS) (CANDIDA)

KOCKOVA-KRATOCHVILOVA, Anna; SANDULA, Jozef

Serologic method for detection of culture and wild yeasts. Kvasny prum 9 no.8:181-186 Ag '63.

1. Chemicky ustav Slovenskej akademie vied, Ceskoslovenska akademie ved, Bratislava.

SANDULA, J.; MERKEL, M.

Chemical structure of Candida albicans. Bull. acad. Pol. sci. [Biol.] 13 no.8:463-468 '65.

1. Submitted March 30, 1965.

SANDULA, Jozef; KOCKOVA-KRATOCHVILOVA, Anna; ZAMECNIKOVA, Marcela

Pathogenicity of strains of Candida albicans. Biologia 18 no.11:843-847 '63

1. CSAV Chemicky ustav Slovenskej akademie vied v Bratislave.

BUTA, I.; SANDULACHE, Al

Lakes of the Ludus River Basin. Probleme geog 8:499-509 '61.

SANDULACHE, Al.

Pogaceaua Lake. Studia Univ B-B S Geol-Geog 8 no.2:93-97 '63

PUSCARU-SOROCEANU, Evdochia; PUSCARU,D.; SANDULEAC, I.

Dynamics of the structure and production of the Nardus stricta pastures in the Fagaras Mountains. Studii cerc biol veget 15 no.4:499-520 '63.

1. Comunicare prezentata de C.C.Georgescu, membru corespondent al Academiei R.P.R.

BRYUNELLI, B.Ye.; SANDULENKO, S.M.

Radar observations of auroras at Soviet Antarctic stations in 1959. Geomag. i aer. 1 no.5:679-686 S-O '61. (MIRA 15:1)

1. Leningradskiy gosudarstvennyy universitet imeni Zhdanova.
(Auroras) (Radar in astronomy)

SANDULESCU, A.

19

✓ **Reduced widths for deuteron emission calculated by means of the nuclear shell model.** 19 M. Micu and A. Săndulescu. *Acad. rep. populare Romîne, Inst. fiz. atomica si Inst. fiz., Studii cercetări fiz.* 10, 257-76(1959); cf. Lane, *C.A.* 48, 6269a.—A study is presented on reduced widths in reactions with deuterons produced by complex nuclei, calcd. by means of the nuclear shell model. Anal. expressions of reduced widths have been obtained for the case of the complex system of *n* equiv. nucleons, on the outside of a closed shell, as well as in the particular case when there is only one single nucleon. Each expression is obtained in the case of the 2 extreme couplings *L S* and *j j* of the nuclear shell model. Results are compared with exptl. results in the case of the reactions $He^5 \rightarrow T^3 + D^2$ and $Li^6 \rightarrow He^4 + D^2$. M. Lapidot

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SANDULESCU, A.

17

Reduced widths for nuclear emission, according to Nilsson's model. M. Micu and A. Sandulescu. *Acad. rep. populare Romine, Inst. fiz. atomica și Inst. fiz., Studii cercetări fiz.* 10, 651-7(1959)(English summary).—The reduced widths for a single nucleon emission were calcd. and it was found that the nuclear wave function is separately antisym. with respect to neutrons and protons, the individual wave functions being those given by N. (*CA* 50, 7605*h*). Theoretical results were compared with exptl. data for a few light nuclei — N^{15}, N^{16}, F^{17}, B^{13}, C^{15}, O^{17}.

M. Ben Eliezer

5

SANDULESCU, Aurel

Theory of favored α transitions. Studii cerc fiz 16 no.9:1035-1090 '64.

1. Institute of Atomic Physics, Bucharest, P.O. Box 35.

86169

R/002/60/000/009/002/003
A125/A026

17.2400

AUTHOR: Sănduleac, Eugen, Engineer

TITLE: Genetics in the Atomic Age

PERIODICAL: Ştiinţă şi Tehnică, 1960, No. 9, pp. 18-19

TEXT: Subject article deals with the transformation of the nature of plants, microorganisms, animals, and human beings by radiation. The study of heredity by radioisotopes was considerably developed during the last few years. The Institute of Genetics of the Soviet Academy of Sciences is especially working on problems of the effects of radiation on biology. V.A. Strunikov and L.M. Gulamova worked out a method for the establishment of traced silkworm lines, according to their sex, by X-rays. The use of nuclear power in genetical and biological research was presented at the All-Union Scientific Technical Conference for the Application of Radioisotopes and Stable isotopes in Agriculture, held in Moscow in April 1957, and at the All-Union Conference for Use of Radioisotopes, in Moscow in 1958. The Soviet scientist Sisakian, after having irradiated rye plants, came to the conclusion that for the modification of the metabolism of nucleic acids, there are greater doses necessary than for the transformation of

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LUPASCO, Gh.; DUPORT, Maria; SANDULESCO, Maria; CRISTESCO, Aurella;
COMBIESCO, Ileana; SANDESCO, Ionella

Sensitivity of adult Anopheles in Rumania to insecticides with residual effect. Arch. Roum. path. exp. microbiol. 20 no.3:441-460 S '61.

1. Travail effectue dans l'Institut "Dr. I. Cantacuzino", sous la direction du Prof. M. Ciuca, faisant partie du programme des recherches coordonnees par l'OMS.

(ANOPHELES pharmacology) (INSECTICIDES pharmacology)

SCHELL, H.D.; TANASESCU, D.; LUTA-MOLDOVEANU, N.; ARNET, L.; MOTET-GRIGORAS, D.; SELARIU, C.; COTARIU, D.; BATCU, A.; SANDULESCU, C.; FILIPESCU, H.; HARALAMBIE, G.; MIHAESCU, S.

General problems; research methods; reviews. Studii cerc biochimie 5 no.4:601-625 '62.

MOLDOVAN, I.; SANDULESCU, D.; IONESCU, Al.Gh.; RADOVICI, C.

High-purity alumina for catalysts. Rev chimie Min petr 15 no.11: 665-667 N '64.

SANDULESCU, R.; LANDAUER, I.

Study of F_1 hybrids obtained by the sexed crossing of different species of tobacco. Studii cerc biol veget 13 no.2:261-271 '61.
(EEAI 10:11/12)

1. Institutul de cercetari alimentare, Sectia culturii tutunului, Bucuresti-Baneasa. Communicare prezentata de Al. Priadcencu, membru corespondent al Academici R.P.R.

(Tobacco) (Hybridization)

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RUM/8-59-1-1/24

1,2000

AUTHORS: Carafoli, E., Sǎndulescu, S.

TITLE: Aerodynamical Characteristics of Ailerons Having a Harmonic Oscillation 26 in Supersonic Regions

PERIODICAL: Studii şi Cercetǎri de Mecanicǎ Aplicatǎ, 1959, Nr 1, pp 7 - 40 (RUM)

ABSTRACT: This is a study on harmonically oscillating motions of ailerons around a joint. The authors establish in a preliminary section all important data, as follows: Considering a system of coordinates $Ox_1x_2x_3$, the hypothesis of small disturbances is given in Equation 1, in which U_∞ is the speed of the nondisturbed flow directed after the Ox_1 axis, a_∞ the speed of the sound, M_∞ the respective Mach number and $\varphi(x_1,x_2,x_3,t)$ the motion potential. Notating the pulsation of a periodic motion with ω the authors introduce the Equation 2; "h" being a referance length, e.g. the wing chord. In case of a harmonic oscillation motion, the motion potential could be [Ref 1] expressed in Equation 3, in which the reduced potential $\phi(x_1,x_2,x_3)$ is independent from the time, and its derivation in ratio of x_3 is the "vertical reduced speed", according to Equation 4. Computing the partial derivations of the motion potential and substituting them in Equation 1, the reduced potential are given in Equation 5.

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Aerodynamical Characteristics of Ailerons Having a Harmonic Oscillation in Supersonic Regions

Considering a polygonally shaped aileron which has an oscillating motion of small frequency around the joint OO^x, the oscillating motion of the $OA_1'A_3'O^x$ surface can be obtained by superposing the following harmonic oscillating motion [Ref 2]: $\Omega_1 = \Omega_0 e^{i\omega t}$ of the $OA_1'A_2'$ surface around the OA_2' axis, and $\Omega_2 = -\Omega_0 e^{i\omega t}$ of the $OA_3'A_2'$ surface around the O^xA_2' imaginary axis (Figure 1). Decomposing the first oscillating motion into its components and using the previously established general formulae [Ref 2], the authors deduce for the elevation of the point P of the coordinates x_1, x_2 (Equation 7) respectively for the vertical reduced speeds: $\beta_0 = -E_2$, (Nr 8) and $\beta_1 = i\frac{\lambda}{k}\left[E_1x_2 - E_2x_1\frac{1+2B^2}{B^2}\right]$ (Nr 8'). Proceeding in a similar way in case of the second oscillating motion, the elevation of the point P^x of the coordinates x_1, x_2, is expressed in Equation 9, and the reduced vertical speed by: $\beta^*_0 = E_2$, (Nr 10), $\beta^*_1 = -i\frac{\lambda}{k}\left[E_1x_2^* - E_2x_1^*\frac{1+B^2}{B^2}\right]$ (Nr 10'). Based on the formulae 8 and 10, the reduced potentials of both oscillating motions are expressed by: $\phi = \phi_1 + i\frac{\lambda}{k}\phi_2$, $\phi^* = \phi^*_1 + i\frac{\lambda}{k}\phi^*_2$, (Nr 11). The expressions of the pressure coefficients C_p and C_p^* can be obtained from the pressure equation of a nonpermanent motion given in Equations 12 and 12'. The reduced axial speeds:

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Aerodynamical Characteristics of Ailerons Having a Harmonic Oscillation in Supersonic Regions

$$u_o = \frac{\partial \phi_1}{\partial x_1}, \quad u_1 = \frac{\partial \phi_2}{\partial x_1}, \quad u_o = \frac{\partial \phi_1^*}{\partial x_1^*}, \quad u_1^* = \frac{\partial \phi_2^*}{\partial x_1^*} \qquad \text{(Nr 13)}$$

can easily be determined by using the results of previous works [Refs 4 and 5]. Using on the other hand the formulae of Euler for the potentials ϕ_1 and ϕ_1^*, the authors obtain: $\phi_1 = x_1(u_o + yv_o)$, and $\phi_1^* = x_1^* (u_o^* + yv_o^*)$, (Nr 14), and considering the connection between the respective reduced speeds, deduced from the compatibility relation, the potentials ϕ_1 and ϕ_1^* can be easily determined, if u_o respectively u_o^* are known. The authors then are examining polygonally shaped ailerons with subsonic and supersonic leading edges, triangular ailerons, trapezoidal ailerons, trapezoidal ailerons with subsonic and supersonic edges and rectangular ailerons. At the study of harmonic oscillations of ailerons with subsonic or supersonic leading edges, the joint can have every position in ratio of the Mach cone. The expressions of the reduced axial speeds and of the potentials of both oscillating motions have been determined in a previous work [Ref 2] and are not derived any more, but only mentioned, since they define the pressure coefficients C_p and C_p^*. In case of an oscillating motion of the $OA_1'A_2'$ surface (Figure 2), the aileron has a supersonic and a subsonic leading edge (OA_1'), as well as an OA_2' edge, which makes the

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reduced vertical speed to have a leap of 0 value to left and of β_0 value to right for the homogeneous of the first order and from 0 to β_1 for the homogeneous motion of the second order. In these conditions the authors establish the expressions u_0 (Equation 16) and ϕ_1 (Equation 16') for the homogeneous motion of the first order, and u_1 (Equation 17) for the homogeneous motion of the second order. Studying the oscillating motion of the $\overset{*}{O}A_3^{\prime}A_2^{\prime}$ surface, the authors consider an aileron with supersonic leading edges, the reduced vertical speed being zero, and β_0 being in its interior. The homogeneous motion of the first order is given by u_0^* (Equation 18) and ϕ_1^* (Equation 18'). In case of the homogeneous motion of the second order, the reduced axial speed can be obtained by the expression u_1^* (Equation 19). The authors then compute the lift coefficient, C_{z1} being the partial lift coefficient as an effect of the first oscillating motion and C_z^*, resulting of the second oscillating motion. If the joint 00* is subsonic, the lift coefficients can be computed according to Equations 23 and 23'. For the computation of the proper lift coefficient of the proper aileron, the authors deduce the expressions 25 and 25'. In case of a supersonic 00* joint, the partial lift coefficients are more simple than in the Equations 27 and 27'. At the calculation of the resistance co-

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efficient, the contribution of the total power produced on the aileron, contribution of the power which acts only upon the mobile $OA_1^!A_3^!O^*$ surface, and contribution of the suction which appears only in case of subsonic leading edges have to be taken in consideration. The resistance coefficient C_{xa} at the advancing is given in Equation 29, S_m being the area of the $OA_1^!A_3^!O^*$ mobile surface. The axial disturbance speed "u", given in Equation 33 is deduced from the Equation 3. Replacing ϕ_1, $\frac{\partial \phi_1}{\partial x_1}$ and $\frac{\partial \phi_1}{\partial x_1}$ by the expressions 16, 16' and 17), making $x \rightarrow l_1$ and putting into evidence the factor $\sqrt{r}$, the expression for $(u)_{x \rightarrow l_1}$ (Nr 34) is deduced. The suction force S_c can now be calculated by a simple integration. The authors finally deduce the expression for C_{xs} (Nr 35) which is the same for every position of the joint against the Mach cone. This term becomes imaginary if the $OA_1^!$ leading edge becomes supersonic. Notating with C_{l1} the coefficient of the rolling moment of the first oscillating motion and with C_l^* the coefficient of the rolling moment of the second oscillating motion, the total coefficient of the rolling moment can be expressed by Equation 36. If the joint 00^* is subsonic, the coefficients of the rolling moment are given by the expressions 37 and 37'. In case that the joint 00^* is supersonic, these coefficients are given by the expressions 39 and 39'.

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The coefficient of the pitching moment is given by:

$$C_{ma} = C_{m1} + C_m^* (1 - \frac{h^*}{h}) C_z^* \quad \text{(Nr 40)},$$

in which the coefficients of the pitching moment appearing as an effect of the two motions C_{m1} and C_m^* are given by the relations 41 and 41'. If the joint is subsonic, the coefficients of the pitching moment are given by the expressions 42 and 42'. The coefficients referring to the proper aileron, are given by the relations 43 and 43'. If the joint is supersonic, the coefficients of the pitching moment are supplied by the Equations 44 and 44'. The coefficient of the control surface moment C_{mca} can be obtained from: $C_{mca} = C_{mc1} + C_{mc}^*$, (45) in which C_{mc1} results from the first motion and C_{mc}^* from the second oscillating motion. The partial aerodynamical coefficients which interfere in the formulae 46 and 46' refer only to the mobile surfaces. The authors then proceed to the calculation of the coefficients of polygonal ailerons with a supersonic leading edge. The OA_2' edge of the $OA_1'A_2'$ surface (Figure 4) causes to the reduced vertical speed a leap of 0 value to left and of β_0 value to right for the homogeneous motion of the first order, respectively from 0 to β_1 for the homogeneous motion of the second order. In this situation the authors have already

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established in a previous work [Ref 2] the expressions for the reduced axial speeds and reduced potentials: u_o, ϕ_1 (47 and 47') for the homogeneous motion of the first order and u_1 (Nr 48) for the homogeneous motion of the second order. Regarding the oscillating motion of the $O^*A'_3A'_2$ surface, the reduced axial speeds u_o^* and u_1^*, respectively the potential ϕ^*_1 are defined by the relations (18, 19 and 18'). In this situation the pressure coefficient C_p^* (Equation 12') remains unchanged, a fact which causes that the partial aerodynamical coefficient remains also unchanged. The lift coefficient of the subsonic leading edge can be computed by the relation 20. The lift coefficient referring to the whole surface covered by the Mach cone, the OO^* joint being subsonic, can be computed in relation 49. If the OO^* joint is supersonic, C_{z1} is supplied by the relation 51. Resistance coefficient at the advancing: if the leading edge of the aileron is supersonic, there is no suction force, thus the formula 29 is simplified in Formula 52. If the OO^* joint is subsonic, C_{za} will be replaced by the expression computed for the entire surface affected by the oscillating motion of the aileron. C_z^* and C_{z1} will be replaced by the relation 25', respectively 50. S and S_m are the surfaces

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$OA_1^{\prime}D_2^{\prime}$, respectively $OA_1^{\prime}A_3^{\prime}O^*$ (Figure 4). If the joint is supersonic, C_{za} is the lift coefficient of the aileron and C_{z1} and C_z^* are given by the formulae 51 and 27'. The total coefficient of the rolling moment in ratio of the Ox_1 axis is given by the formula 36. If the OO^* joint is subsonic, the coefficient of the rolling moment is given in relation 53. The same coefficient of the proper aileron is given by the relation 54 and in case the joint is supersonic by relation 55, C_1^* being given by Nr 39'. The coefficients of the pitching moment are given in case the joint OO^* is subsonic by the expression 56; in case of the proper aileron by the expression 57 and in case that the joint is supersonic by the expression 58. The formulae which allow the computation of the control surface moment were previously mentioned in Equations 45, 46 and 46'. The results obtained above can be also used for the computation of triangular ailerons. In case of trapezoidal ailerons with a subsonic leading edge, the expressions of the reduced axial speeds and reduced potentials can be deduced from the relations of the polygonal ailerons. The partial coefficients of the first oscillating motion are given by expressions 60, 61, 62 and 63, and for the second oscillating motion in expressions 64, Aerodynamical Characteristics of Ailerons Having a Harmonic Oscillation in Supersonic Regions

65 and 66. The aerodynamical coefficients of the trapezoidal aileron results by adding the partial coefficients in accordance with the previously established formulae 20, 29, 36, 40 and 45. The partical coefficients of the first oscillating motion referring to the entire surface affected by the oscillating motion of the aileron can be obtained from the relations 60, 61, 62 and 63. For the second oscillating motion, these coefficients are given by the relations 68, 69 and 70. In case of a trapezoidal aileron with a supersonic leading edge, the axial reduced speeds and the reduced potential can be obtained by making $l_2 \to \infty$ in the formulae 47, 47' and 48 for the first oscillating motion and in the formulae 18, 18' and 19 for the oscillating motion of the $CO^*A_3'C'$ surface. The partial coefficients of the first oscillating motion are given by expressions 71, 72 and 73. The relations determined in the preceding case are valid for the second oscillating motion. The aerodynamical coefficients of rectangular ailerons can easily be obtained from those established for trapezoidal ailerons with a subsonic leading edge, by replacing in the respective relations: $l_1 = l_3 = 0$ for the

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coefficients of the proper aileron and replacing $l_1 = 0$ and $l_3 = \frac{1}{B}$ for

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the partial coefficients referring to the entire surface affected by the oscillating motion of the aileron. Finally the authors present a table of constants.

There are: 5 diagrams and 5 references, 2 of which are English, 2 French and 1 Rumanian.

SUBMITTED: October 28, 1958

Card 10/10

SANDULESCU, T.

Technical and economic considerations regarding the use of additives for lubricating oils. Petrol si gaze 15 no.11: 609-613 N '64.

CALIN, C.; SANDULESCU, Valeria

Identifying some secondary dyes in the direct R black product (C.I. 30245). Rev chimie Min petr 15 no.10:624-629 O '64.

29681
S/181/61/003/010/003/036
B102/B108

24.7500 (1144, 1454, 1482)

AUTHORS: Sandulova, A. V., Dronyuk, M. I., and Rybak, V. M.

TITLE: Diffusion of indium into germanium of different degrees of purity

PERIODICAL: Fizika tverdogo tela, v. 3, no. 10, 1961, 2913-2917

TEXT: The authors investigated experimentally the diffusion parameters of In^{114} in dependence on structure and degree of purity of the germanium crystals. Tests were made with mono- and polycrystalline germanium having resistivities of 40, 2.8 and 0.007 ohm·cm. The tracer method combined with successive removal of thin layers was applied. The specimens were mechanically polished and chemically treated plane-parallel plates with n-type conductivity. In^{114} was dissolved in nitric acid and then applied to the Ge surface. The specimens were electrically heated in a pure argon atmosphere. Temperature was kept constant to ± 1°C. The diffusion coefficients were determined and plotted in diagrams ($\log D = f(1/T)$, Figs. 1,2). The respective functions for single crystals (Fig. 1) were

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found to be: $D_{40} = 16.37\ \exp(-65,600/RT)$ $D_{2.8} = 3.1\cdot10^{-2}\ \exp(-50,900/RT)$ and $D_{0.007} = 2.9\cdot10^{-4}\ \exp(-39,900/RT)$. The subscripts indicate the resistivities. For the polycrystalline specimens (Fig. 2) these functions are $D_{40} = 0.36\cdot10^{-7}\ \exp(-23,200/RT) + 0.26\ \exp(-55,600/RT)$ and $D_{0.007} = 0.37\cdot10^{-8}\ \exp(-15,550/RT) + 0.47\cdot10^{-3}\ \exp(-38,300/RT)$. The numerical values of D were between $0.34\cdot10^{-13}$ cm^2/sec (700°C, 40 ohm·cm) and $109.70\cdot10^{-13}$ cm^2/sec (900°C, 0.007 ohm·cm) for single crystals, and $2.29\cdot10^{-13}$ cm^2/sec and $346.80\cdot10^{-13}$ cm^2/sec for polycrystals. $\log D = f(\log \varrho)$ were straight lines, the inclination of which decreased with increasing temperature. The salient points of the curves in Fig. 2 indicate that two different diffusion mechanisms take place in polycrystalline samples. The coefficients D_0 in the functions $D = D_0 \exp(Q/RT)$ and the activation energies Q depend significantly on the resistivity, i.e. on the degree of purity of the specimens; their free-electron concentrations at 300°K were found to be $9.9\cdot10^{17}$, $8.1\cdot10^{14}$ and $5.6\cdot10^{13}$ cm^{-3} for the resistivities 0.007, 2.8 and

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40 ohm·cm, respectively. Conclusions: (1) The diffusion coefficients depend on the degree of purity of the germanium: the higher the impurity concentration, the higher the diffusion coefficient. (2) The diffusion of indium into germanium takes place via the vacant lattice sites. (3) Indium diffusion into polycrystalline germanium at high temperatures takes place mainly through the crystal grains, at low temperatures mainly along the interfaces. There are 3 figures, 2 tables, and 12 references: 8 Soviet and 4 non-Soviet. The two references to English-language publications read as follows: W. C. Dunlap. Phys. Rev. 86, 4, 615, 1952; 94, 6, 1531, 1954; C. S. Fuller. Phys. Rev., 86, 1, 186, 1952.

ASSOCIATION: L'vovskiy politekhnicheskiy institut (L'vov Polytechnic Institute)

SUBMITTED: March 13, 1961

Card 3/~~4~~ 3

L 08418-67 EWT(1)/EWT(m)/EWP(t)/ETI IJP(c) JD/WW/JG/GD

ACC NR: AT6034354 SOURCE CODE: UR/0000/66/000/000/0107/0113

64
63

AUTHOR: Sandulova, A. V.

B+1

ORG: L'vov Polytechnic Institute (L'vovskiy politekhnicheskiy institut)

TITLE: Silicon 21 foils and their use in microelectronics 25

SOURCE: AN UkrSSR. Poluprovodnikovaya tekhnika i mikroelektronika (Semiconductor engineering and microelectronics). Kiev, Naukova dumka, 1966, 107-113

TOPIC TAGS: microelectronic component, microelectronic thin film

ABSTRACT: A new method of growing silicon foil by crystallization from the vapor phase is reported. The method is based on the joint crystallization of silicon and gold from the vapor phase under the action of bromine vapor. The silicon foil was grown at 10^{-5} mm Hg in an ampoule divided by a narrow neck into two parts whose volume ratio is 1:2. The length of the ampoule was less than 25 cm, and its diameter was 2.5 cm. Silicon (6—8 g) together with bromine and gold were placed in the largest portion of the ampoule and heated to 1100—1200C; the smaller portion was heated to 800—900C. The bromine vapor dissolved the silicon and the gold, thus enhancing the transfer of evaporated halogen compounds from the hot to the cooler portion of the ampoule. During the

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L 08430-67 EWT(m)/EWP(t)/ETI IJP(c) JD/WW/JG/GD

ACC NR: AT6034355 SOURCE CODE: UR/0000/66/000/000/0114/0121

58

55

AUTHOR: Sandulova, A. V.; Mar'yamova, I. I.; Zaganyach, Yu. I.

B+1

ORG: L'vov Polytechnical Institute (L'vovskiy politekhnicheskiy institut)

6

TITLE: Piezoresistance properties of acicular and filamentary single crystals of silicon

16 21

SOURCE: AN UkrSSR. Poluprovodnikovaya tekhnika i mikroelektronika (Semiconductor engineering and microelectronics). Kiev, Naukova dumka, 1966, 114-121

TOPIC TAGS: strain gage, pressure transducer, piezoelectric crystal, piezoresistance effect

ABSTRACT: The piezoresistance properties of acicular and filamentary single crystals of silicon were investigated. The crystals were grown from gaseous silicon in the presence of Br 27 solvent; p-type crystals were obtained by Br and Al doping and n-type, by As doping. The contacts were made by welding gold, silver, or platinum microwire (20 to 100 μ) to the end of the crystals. To produce tensile or compressive strain in the sample, it was glued to the upper or lower surface of a beam which was periodically bent (in the vertical plane) by

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ACC NR: AT6034355

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a special device. The precisely measured beam deflection was used for calculation of strain in the sample. The resistance variation of the samples was measured using an MOD-58 d-c bridge together with an EPP-09-M1 recording potentiometer. The strain-to-resistance relation is linear for both types of crystal and both types of strain in the 1.10^{-4}—8.10^{-4} strain variation range. High-output signals (40—80 mv) from this crystal can be recorded without amplification. The sensitivity of the p-type crystal sensor is 50—70 times higher than that of metallic crystal sensors. The sensitivity of n-type crystals is low. Orig. art. has: 2 formulas and 8 figures.

SUB CODE: 09, 20/ SUBM DATE: Dec64/ ORIG REF: 003/ OTH REF: 012/
ATD PRESS: 5103

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Card 2/2

SANDULOVA, G.V.

S/185/62/007/003/007/015
D299/D301

AUTHORS: Sandulova, H.V., Dronyuk, M.I. and Shcherbay

TITLE: Diffusion of indium in copper protoxide

PERIODICAL: Ukrayins'kyy fizychnyy zhurnal, v. 7, no. 3, 1962, 289 - 292

TEXT: The results are given of an experimental determination of the diffusion parameters of indium in copper protoxide; both single crystals and polycrystalline specimens were investigated. The radioactive isotope In^{114} was the diffusant. The diffusion coefficients were determined by the method of successive removal of thin layers, followed by measurements of gamma-radiation activity. The temperature dependence of the diffusion coefficient was investigated at temperatures of 600 to 1050° C. In order to reduce experimental errors, the diffusion coefficient was measured on several specimens, and its values --averaged. For single crystals, the temperature dependence of the coefficient is expressed by the formula

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Diffusion of indium ...

$$D = 0.16 \times 10^{3} \exp(-33500/RT). \qquad (1)$$

The polycrystalline graph consists of 2 straight lines which are at a certain angle; this is an indication of 2 different diffusion mechanisms in polycrystalline specimens; the temperature dependence is expressed by the formula

$$D = 0.24 \times 10^{-7} \exp\left(-\frac{12400}{RT}\right) + 0.89 \times 10^{-5} \exp\left(-\frac{24800}{RT}\right), \qquad (2)$$

where the first term corresponds to low temperatures. The single-crystal graph is a straight line; hence a single diffusion mechanism exists for both low- and high temperatures. In the case of polycrystalline specimens. the main contribution to the diffusion flow at low temperatures is made by migration through intercrystal layers, whereas at high temperatures the main factor is bulk diffusion. At equal temperatures, the diffusion coefficients in polycrystalline specimens are much higher than in single crystals. For comparison, the diffusion parameters of various elements (Ta, Tl, Ag, Zn) in copper protoxide, are listed in a table.

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Their diffusion parameters are close in value for both single- and polycrystals. This leads to the conclusion that the diffusion of these elements takes place through the vacancies. There are 1 figure, 1 table and 9 references: 6 Soviet-bloc and 3 non-Soviet-bloc. The references to the English-language publications read as follows: Sibbert, W. Castellan and W.J. Moore, J. Chem.Phys., 17, 1, 41, 1949; W. Moore, B. Selikson, J.Chem. Phys., 19, 1539, 1951.

ASSOCIATION: L'vivs'kyy politekhnichnyy instytut (L'viv Polytechnical Institute)

SUBMITTED: May 22, 1961

Card 3/3